

## Abstract

A method of detecting Parkinson's disease through MRI of substantial nigra pars compacta (SNc) tissue. The method involves obtaining a gray matter suppressed (GMS) MRI signal from the SNc tissue, obtaining a white matter suppressed (WMS) MRI signal of the SNc tissue, and combining information from the GMS and WMS MRI signals to produce resultant signals indicative of Parkinson's disease. A similar method can be used to detect Progressive Supranuclear Palsy. A method of distinguishing between the two diseases involves obtaining at least two starting MRI images of SNc tissue using different MRI parameters, and combining the starting images to compute resultant signals differentiating between the two forms of parkinsonism.